

**IN THE SPECIFICATION:**

Please replace the paragraph spanning pages 15-16 with the following paragraph:

Referring now to Figures 2b and 2c, only one meridional plane 154 of the sensor is shown for simplicity. As shown, the meridional plane 154 lies in the plane defined by the axes x and z of a rectangular coordinate system. It will be appreciated by those skilled in the art that the meridional plane 154 shown represents the configuration of any of meridional planes 154a-c and that axis z may be in any spatial direction. For the preferred embodiment's capped sample vial 130, the most sensible direction to define axis z is approximately vertically upwards. For other embodiments, such as the sample vial or chamber defined by a quartz pipe or other transparent or translucent conduit for receiving flowing fluids therethrough and described further below, there are no practical restrictions on the length and orientation of axis z. In another embodiment shown in Figure 2c, a plain-glass beam-splitter 157 (~~shown in broken lines~~) and small reference photocell 159, are positioned so as to provide continuous monitoring of LED output power and feedback to correct for LED variations, if such referencing is needed or desired.--

Please replace the paragraph spanning lines 3-16 of page 19 with the following replacement paragraph:

Still referring to Figure 3, the seven LEDs 150 are of various colors. Preferably, the seven LEDs consist of light blue (B+) and dark blue (B-) LEDs 150c within the meridional plane 154c, yellow (Y) and green (G) LEDs 150b within the meridional plane 154b, and red (R), orange(O) and infrared (IR) LEDs 150a within the meridional plane 154a. The light emitting from the LEDs 150 passes through the sample vial 130. Within the sample vial 130, the light is refracted and scattered, if turbidity exists, as described above with respect to Figures 2a, 2b and 2c. It is envisioned that two of the PVDs 152 will receive filtered light. In a preferred

embodiment, and as described above, PVD 152a in meridional plane 154c has a red light blocking filter 176 associated therewith (e.g., ~~Written~~ Written #47), and PVD 152a has a blue-green blocking filter 178 associated therewith (e.g., ~~Written~~ Written #25). The use of optical filters aids in reliably separating the average fluorescence emission intensity from scattered intensities. In the case of sensing fluorescence by pulsed excitation or time-delay gated methods, the physical filters may be omitted.

Please replace the paragraph spanning lines 7-15 of page 28 with the following paragraph:

If addition of a reagent is required to create the scattering of particles within the sample, additional steps may be required. An additional sample vial 130 should be filled with a sample and sealed. Even though no reagent is added, the additional sample vial 130 should be treated, i.e., shaken, substantially exactly as the sample vial 130 with the reagent, and a baseline reading taken to account for any natural turbidity present in the original sample. Thus, by using such a reference point with a similar shaking history, the effects of settling and preparation within the sample are mathematically subtracted by the microcontroller 174, in a manner known to those of ordinary skill in the pertinent art, to yield a true turbidity result.